

California Regional Water Quality Control Board  
Santa Ana Region

October 25, 2002

ITEM: 10

SUBJECT: Update on Status of Perchlorate Cleanup by Lockheed Martin Corporation

DISCUSSION:

On July 18, 1997, the Board adopted Cleanup and Abatement Order (CAO) No. 97-58 for the Lockheed Martin Corporation (Lockheed). Order No. 97-58 found that, as a result of past practices at its former Lockheed Propulsion Company (LPC) facility in the Mentone area, east of the City of Redlands, Lockheed had caused or permitted ammonium perchlorate to be discharged to the Bunker Hill Groundwater Basin. Lockheed used ammonium perchlorate in the production of solid rocket fuel at the former LPC facility.

Prior to the adoption of CAO No. 97-58, the Board adopted CAO No. 94-37 in 1994. CAO No. 94-37 ordered Lockheed to cleanup and abate the effects of trichloroethylene (TCE) that had been discharged from its former LPC facility. On July 31, 1996, the Executive Officer, pursuant to California Water Code Section 13267, directed Lockheed to prepare and implement a Water Supply Contingency Plan (WSCP) for TCE. The purpose of the WSCP was to assure that local water purveyors would be able to provide a safe, reliable water supply to their customers. A WSCP was prepared by Lockheed and submitted to the Executive Officer in September 1996. The WSCP was reviewed by Board staff and the water purveyors, revisions were made, and the WSCP was conditionally approved by the Executive Officer in March 1997. Following the discovery of perchlorate in the Bunker Hill Groundwater Basin in early 1997 and the subsequent adoption of CAO No. 97-58, Lockheed initiated discussions with the water purveyors to address perchlorate, similar to the discussions that were previously conducted to address TCE in the WSCP.

Perchlorate and TCE impacted many municipal wells in the Bunker Hill Groundwater Basin, including wells belonging to the Victoria Farms Mutual Water Company (VFMWC) and the Cities of Riverside, Redlands and Loma Linda. Following the adoption of the CAOs and the development of a WSCP, Lockheed has been working cooperatively with local water suppliers to provide wellhead treatment and alternate water supplies.

In October 1999, Lockheed provided \$3.7 million to the City of Redlands to compensate the City for the cost of groundwater treatment facilities for TCE that the City had built and operated for the prior 14 years. Lockheed is continuing to work with the City of Redlands to address the impacts of perchlorate on the City of Redlands' wells.

Lockheed provided an alternate water supply for the VFMWC by funding a permanent water supply connection to the City of San Bernardino. Lockheed is currently reimbursing VFMWC for the incremental cost of this imported water.

Lockheed drilled new wells for the City of Loma Linda to provide replacement water for existing wells that had been impacted. Lockheed and the City of Loma Linda are currently evaluating alternative plans to improve the blending capabilities of the City's water supply system.

Lockheed conducted a pilot test on several ion exchange resins for the removal of perchlorate at one of the City of Riverside's wells during 2000 and 2001. The pilot test showed that treatment using single-stage, conventional, fixed-bed ion exchange can provide a reliable, cost-effective method to remove perchlorate from groundwater. Wellhead treatment for perchlorate will be implemented at the City's Tippecanoe and Sunnyside Regional Water Treatment Systems that were constructed by Lockheed to remove TCE. Both of the perchlorate treatment systems will utilize Calgon polyacrylic resin.

The City of Riverside is expected to begin operation of a perchlorate treatment system for a well on the Sunnyside System in October 2002, and for a well on the Tippecanoe System by December 2002. Construction of the North Orange Pipeline to deliver water for blending purposes from the City's North Orange Wellfield has begun. This new pipeline, the existing carbon treatment systems for TCE, and the new ion exchange treatment for perchlorate, are being paid for by Lockheed. Lockheed also developed a computerized blending system for the City's wells. Lockheed is continuing to work with the City to provide wellhead treatment and to assure the delivery of a safe, reliable water supply for the City's customers.